



Maine Tree Fruit Newsletter

Thursday, August 13, 2020 Vol 27:11

Maturity Report

Fruit maturity at Highmoor Farm on August 13

Plums

Japanese

First pick of Obilinaja. The best Asian plum we have.
Shiro is almost ready.

American

First pick of Black Ice. Nice red flesh but prone to cracking.
First pick of South Dakota. Good flavor but poor texture.

European – Nothing ready yet.

Peaches

Starfire and Reliance harvests are in progress.

Peaches should be harvested before they are fully ripe to prevent tearing the peel during fruit removal. Brown rot is also a problem with fruit that are fully ripe. Quality is best when the fruit just begin to soften and ground color has changed to yellow. They will continue to ripen off the tree but can develop brown rot.

Fungicide effectiveness for brown rot control:

Poor - sulfur

Fair to Good – Captan, Pristine

Excellent – Indar, Fontelis, Merivon, Luna Sensation, Elevate

The fungicides listed here have a short preharvest interval. If more than one application is needed for control, rotate between chemical classes to prevent resistance, e.g. Indar (DMI, class 3), followed by Merivon (class 7+11 SDHI and QoI strobilurin).

Pears - Still hard and green.

Apple maggot

Apple maggot (AM) trap captures in blocks monitored by the Extension – Pomological Society Scouting Co-op have been lower than the rate of captures in mid-July. However, emergence of adult AM flies is only about half complete so risk of newly emerged AM laying eggs into ripening apples remains.

Some traps are becoming overload with small flies. The best solution is to simply replace it with another trap that has been scraped off and had a new layer of tangletrap applied. But carrying sticky traps around is not convenient. A spray-can version of the adhesive is available. At \$13 a can you are paying for convenience. We tried it out this year and it works to easily renew the sticky surface on a trap.



The standard rule used to be that a final insecticide spray around August 15 was late enough to provide protection through the end of AM emergence. But recent research indicates that AM activity emergence continues into the end of August. Other research has found that the duration of insecticide toxicity to AM is shorter than previously assumed. The old rule was based on experience with Guthion and Imidan as the most commonly used insecticide. Guthion is no longer registered, and many growers have stopped using Imidan because of odor, customer concern about organophosphate insecticide, the 4-day Restricted Entry Interval, and the 14-day no entry interval for Pick Your Own customer access. The newer insecticide active ingredients used to control AM are not as effective as Imidan, and especially less effective than Guthion.

The safe final spray date timing for AM control may also have been affected by larger apple tree canopies back then. And finally, the increased prevalence of Honeycrisp, a valuable cultivar that preferentially attacked by AM, is another change that may affect the reliability of the old rule.

In other words, the old rule may no longer apply. That is the basis for the newer recommendation to maintain AM monitoring into the first week of September and to consider the need to reapply insecticide protection if the number of new AM caught since the end of the protection period from the previous application has worn off.

AM caught in the first 7-10 days after an application can be ignored. Even though you will still catch AM during that time, you can assume that AM present at the time will be killed before they can successfully oviposit into fruit causing damage. As with all such intervals, the rain history has to be considered. More than 1 inch of rain is enough to seriously degrade efficacy against AM. After that control period ends, it is the number of new AM caught that drives the interpretation for whether a follow-up application is needed. Of course, preharvest interval and other factors also need to be considered. The lifespan of a female AM is about 30 days, so trap captures from more than 4-weeks ago can be deducted from accumulation towards a treatment threshold of an average of 1-2 AM per unbaited trap, and 5-8 per odor baited trap.

Mites

The treatment threshold for European red mites and Twospotted spider mites on apple leaves in August are shown below. Mite counts in monitored blocks have been very low for the last few weeks.

AUGUST 1 – 31			
Threshold is average of 5.0 living ERM nymphs or adults per leaf			
Corresponds to 75% of middle-aged leaves with ERM present			
Number of leaves sampled	Number of leaves with ERM present		
	Far Below threshold	Below	Above
30	3	14	30
40	10	24	38
50	14	32	45
60	18	40	53
80	26	56	68
100	41	74	75

While apple foliage can carry a large number of mites before the feeding damage is significant enough to require control, even one mite per leaf on pear leaves can cause a rapid injury reaction called “transpiration burn.”

Pear transpiration burn has occasionally been found in Maine, including this summer.



Photo: Elizabeth Beers, Wash. State Univ.

Sooty Blotch and Flyspeck

Despite dry weather this summer, sooty blotch and flyspeck started showing up earlier than normal, probably because of above average temperatures. The photos, taken August 3, show sooty blotch in various stages of development, and early stage flyspeck. These apples had received a minimal fungicide regime, but in some previous years even trees that had received no fungicide did not show the beginning stages of sooty blotch and flyspeck until August 10-12.



The last photo on the right shows the purplish senescent spots that develop on apple leaves late in the season, and which are beginning to appear this year. They may be caused by the fungus that causes black rot, but the spots do not produce spores that cause black rot infection. The spots are a normal occurrence and do not indicate need for treatment. The prevalence of the spots increases as leaves age, and with cold nights in September and October.

Fall webworm

Apple trees that do not receive canopy insecticide sprays for plum curculio, apple maggot and other key pests, are subject to attack by various late summer foliar and fruit feeders. The most common of these is the fall webworm. The following article is from Michigan in 2014 but is relevant to Maine in 2020. Fall webworm has made its annual appearance in backyard apple trees, along roadsides etc.

“It’s August and time for the annual visit of this generally harmless showstopper known as the fall webworm.

As the end of summer looms, one of the most noticeable insects hits its stride. These insects are not as eye-catching as the home that they build for themselves. The fall webworm, or *Hyphantria cunea*, will be webbing the ends of branches near you soon, if it has not already. This insect could easily be grouped in the “much ado about nothing” category. A big, showy bag of webbing appears over the end of a branch on a shade, fruit or ornamental tree. Inside, the hungry fall webworms are devouring all the leaves. It is highly visible and leaves are being consumed. This has frightened tree-owners around the state to try risky and sometimes dangerous methods to get rid of the webbing. [Michigan State University Extension](#) Master Gardener hotlines and educators are receiving calls asking about how dangerous this pest might be.

Branches have been set on fire or cut off, and pesticides have been sprayed that have rained down on the sprayer to stop this perceived pest threat. This is a case of the human doing much more damage to the tree than the fall webworms ever could. This native insect has more than 50 natural predators and 36 parasites that help control it. Best of all, fall webworms do not eat the buds of next year’s leaves. They are feeding on leaves that are nearing the end of their photosynthesis careers and only have a bit more to give. Next year, the leaves will appear on the currently affected branches with no sign of last year’s damage.

Fall webworms have a wide variety of trees for potential food. Over 90 species of deciduous trees make the menu with fruit and nut trees, like walnuts and elms, and some maples as regular targets. It is unusual to see fall webworms in the same tree year after year and especially on the same branch. They are “one and done” feeders.

Eggs are laid by the female moth on the bottoms of leaves about a month or so before the larvae or caterpillars hatch. The caterpillars construct a web over the end of the branch, enclosing leaves. They feed inside the web, enlarging it as they feed. Their lives as larvae are usually about six weeks, but long after they have left, the webs remain. If the web is white, it is new. If it is tan or brown, there are no larvae there. Webs can last into the winter before falling out of the tree during a wet snow or a windstorm.



Photos: G. Keith Douce, Univ. Georgia, Bugwood.org



On large trees, fall webworms are just as annoying, but not a reason to do anything. If a small tree is engulfed, that's another matter. If fall webworms are on a small tree and you choose to remove it, the easiest way could be called "10-year-old boy biological control." Push a stick into the webbing and pull everything and everybody out of the tree and into a bucket of soapy water to soak for the day. Or the webby mass can be burned or buried. It is possible to just do the 10-year-old boy happy dance on top of them.

Since fall webworms construct such good webbing, pesticides that are sprayed are worthless and just repel off. It would be necessary to tear a hole in the webbing to access the inside. If you are close enough for this, the trusty stick is a safer solution. Smart gardeners always use the path of least pesticides used, especially if it is not necessary.

Consider fall webworms as a showy display to herald summer's passing. A big, white filmy bag on the end of branches should not bother the smart gardener."

Source: Gretchen Voyle. 2014. The rise and fall of the fall webworm, Michigan State University Extension. https://www.canr.msu.edu/news/the_rise_and_fall_of_the_fall_webworm

More fall webworm information available at:
https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5341330.pdf

Topsin M re-registration review

As part of the requirement for every pesticide active ingredient EPA registration to be reviewed every 15 years, thiophanate methyl, the active ingredient in Topsin M, is up for review. The review is primarily about human and ecological risk, but the utility of a product for those who depend on it is also a factor in balancing final recommendations. Comments about the uses and value of Topsin M must be received by August 20, and can be entered on this web page: <https://beta.regulations.gov/comment/EPA-HQ-OPP-2014-0004-0030>

Apple scab fungicide research at UNH

Excerpt from: UNH Research Aims to Manage Apple Scab Using Seafood Industry Byproduct. 8/10/2020. <https://colsa.unh.edu/nhaes/article/2020/08/applescab>

"Because biopesticides are living products, their activity is affected by environment. Biopesticides often fail to grow and maintain high enough population levels in the orchard or do not produce antifungal compounds at levels necessary to suppress the disease. It is increasingly recognized that solving these issues is key to increasing adoption of biopesticides. I am investigating a way to enhance biopesticide effectiveness using chitosan. There is evidence that chitosan may act as a food source for the biopesticides and stimulate production of antifungal enzymes, thereby enhancing their usefulness,"

"Much of the research around chitosan has focused on the reduction of postharvest disease—once the fruit or vegetable has been harvested. Chitosan has shown to be effective in reducing plant disease and preserving fruits and vegetables during storage and transport. Researchers at UNH would like to extend this research to investigate the effect of a chitosan application during crop production and in combination with an application of biopesticides."

Crop Insurance Listening Session

As part of the 2018 Farm Bill, Congress required USDA RMA to solicit feedback about improved crop insurance coverage options for farmers and ranchers selling through local food markets. This includes discussing how existing crop insurance programs can be improved, as well as exploring the possibility of a new crop insurance program.

A listening session for growers from 11 Northeast states will be held via Zoom at 12pm on September 1. The **Zoom link** is

<https://us02web.zoom.us/j/87372872344?pwd=ZEZza2RBS3M0Zm9VeloxSXZXUHczdz09>

Passcode: local

Meeting ID: 873 7287 2344

Telephone participants:

Access number: 1 (646) 558-8656

Meeting ID: 873 7287 2344

Passcode: 746512

You can mute and unmute yourself by typing “*6” (star, followed by the number 6).

Please contact Andre Williamson with any questions regarding the content of this invitation or to provide additional feedback regarding the feasibility of insurance coverage for local food producers. Phone: 240-432-0308 OR email: awilliamson@agralytica.com. If you email, please include “Local foods insurance” as your subject line.

Comments can be submitted by phone or email until September 10. The purpose of the listening session and comment period is to help determine ways to better insure growers supplying local markets. Please join one of these sessions so that your feedback can be heard.

Maine Dept. of Agriculture harvest promotion

The Dept. of Agriculture, Conservation and Forestry (DACF) is assembling a publicity insert to be published in Maine newspapers. The 2020 insert will have a longer duration, and encourage folks to contact the farm directly for more information. They will also publish our reminders to the public about safely participating in their support of businesses that are open to the public.

I believe that Maine State Pomological Society is submitting a list of members for the supplement that includes farm name, email and phone by 12pm, August 21, 2020. For more information contact Anne Trenholm at Anne.Trenholm@maine.gov

DACF pays for the insert. Businesses can also buy an advertisement from the newspaper. The insert helps producers tell the story in an interesting way for readers. The aim is to connect topical items to agriculture. A feature story can help personalize the message and make it relatable. Here are some examples from Open Farm Day:

https://www.maine.gov/dacf/ard/market_promotion/docs/summer-in-maine-agriculture-2020-BDN.pdf

Some ideas for promotional materials:

- * Images from each season to show readers what goes into growing an apple.
- * Favorite recipes
- * Shopping suggestions (for example, the Maine Cheese Guild paired up with a business to ship cheese and offer subscription boxes for homes, businesses, etc.)
- * Harvest updates, general info about the farm and its history.

Some DACF suggestions for harvest season promotion and communication:

- ✓ Keep information on websites and social media up-to-date
- ✓ Write a script for your answering machine and staff that provides updated information for callers
- ✓ Review the Pick Your Own Guidance at <https://www.maine.gov/dacf/covid19/docs/pyo-covid19-guidance.pdf>
- ✓ Write or update your risk management plans (i.e., what to communicate, who's doing what, physical distancing approaches etc., and training)
- ✓ Set out markers/grade stakes and update directional signs. Some print-ready 8,5 x 11 inch farm sales signage examples are at <https://www.maine.gov/dacf/covid19/docs/modified-agritourism-event-signs-2020.pdf>

Mask Droplet Stopping Study

An interesting study on the relative efficacy of 14 different types of face mask materials and designs to reduce the number of droplets ejected into the air was published this week.

The authors emphasized that “the mask tests performed here (one speaker for all masks and four speakers for selected masks) should serve only as a demonstration. Inter-subject variations are to be expected, for example due to difference in physiology, mask fit, head position, speech pattern, and such.” With that caveat in mind, their results are still quite interesting.

The Images, data and charts shown below are adapted from: Fischer *et al.*, *Sci. Adv.* 10.1126/sciadv.abd3083 (2020). The article is online at <https://advances.sciencemag.org/content/early/2020/08/07/sciadv.abd3083>

<p>1. Fitted N95</p> 	<p>5. Cotton5</p> 	<p>9. Cotton4</p> 	<p>13.</p> 
<p>2. Surgical</p> 	<p>6. Swath of polypropylene, not pictured</p>	<p>10. MaxAT</p> 	<p>14. Bandana</p> 
<p>3. Poly/Cotton</p> 	<p>7. Cotton2</p> 	<p>11. Cotton1</p> 	<p>15. No mask</p>
<p>4. Polypropylene</p> 	<p>8. Valved N95</p> 	<p>12. Knitted</p> 	<p>16. Fleece</p> 

Fourteen different face mask types and one mask material were tested.

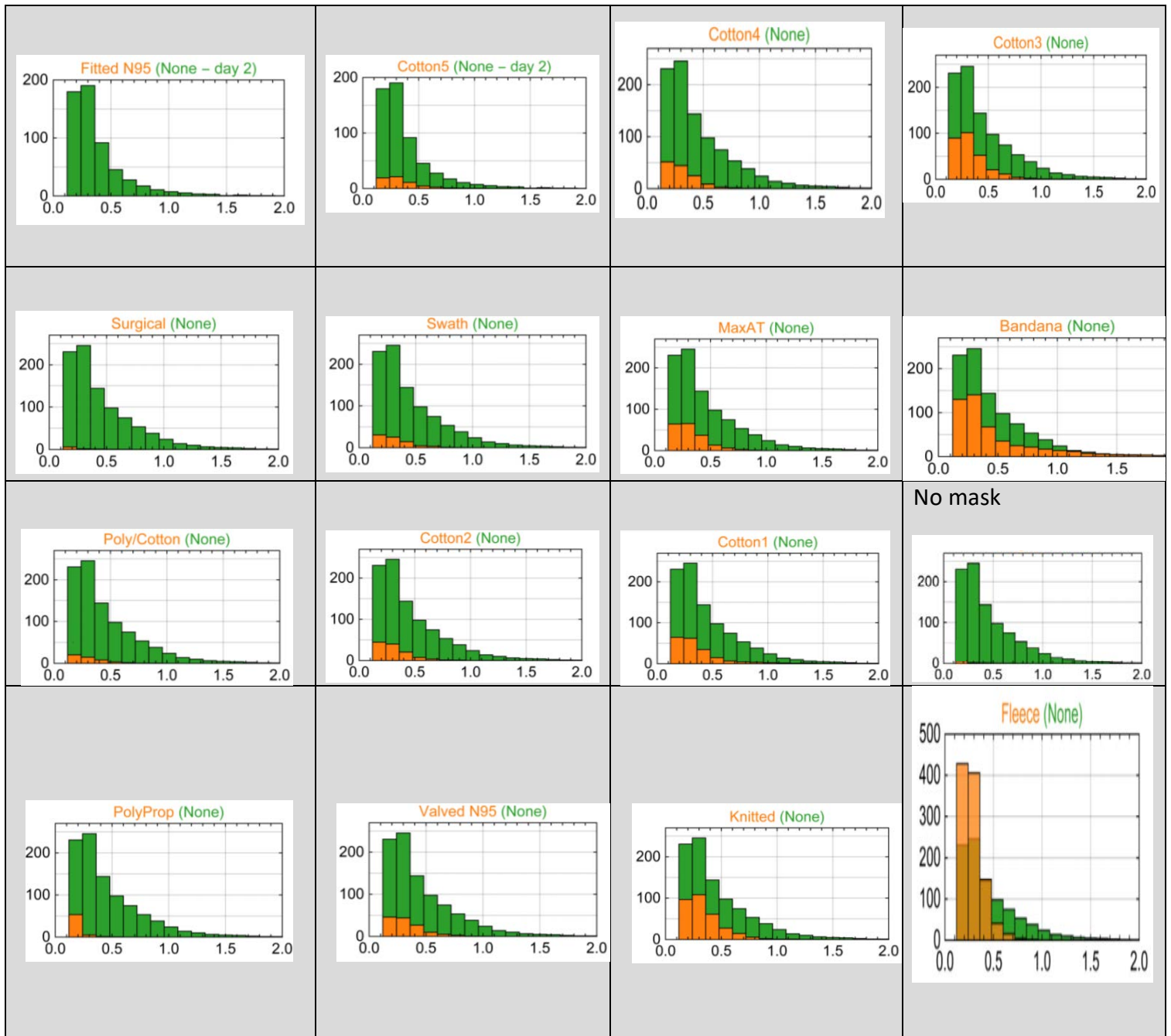
The number and size of droplets observed from each mask type were compared to the number and size observed when no mask was worn by the same speaker.

Photo Credit: Emma Fischer, Duke University.

Name	Description	Number of droplets
1. Fitted N95	N95 mask, no exhalation valve, fitted	0.7
2. Surgical *	Surgical mask, 3-layer	9.7
3. Poly/Cotton	Cotton-polypropylene-cotton mask	50.0
4. PolyProp	2-layer polypropylene apron mask	60.0
5. Cotton5 *	2-layer cotton, pleated style mask	60.0
6. Swath	Swath of mask material, polypropylene	80.0
7. Cotton2	2-layer cotton, pleated style mask	120.0
8. Valved N95	N95 mask with exhalation valve	130.0
9. Cotton4	2-layer cotton, Olson style mask	138.0
10. MaxAT	1-layer Maxima AT mask	195.0
11. Cotton1	1-layer cotton, pleated style mask	200.0
12. Knitted	Knitted mask	310.0
13. Cotton3'	2-layer cotton, pleated style mask	310.0
14. Bandana *	Double-layer bandana	480.0
15. None *	Control experiment, no mask	960.0
16. Fleece	Gaiter type neck fleece	1,050.0

Average number of droplets measured after 40 seconds

Masks marked with an asterisk (*) were tested by four speakers, all others by one speaker. Number of droplet values were visually estimated from charts in the article Supplement. Droplet count for each speaker was measured for each mask 10 times.



Number of droplets by droplet diameter=.

X-axis is droplet diameter in millimeters. Y-axis is number of droplets.

Note that the Fleece mask results show an increase of small droplets greater than the number without using a mask. The authors attributed this to the breakup of large droplets into several smaller ones when passing through the material.

The measurements for “Fitted N95” and “Cotton5” were performed by the same speaker as all other measurements, but on a different day. Therefore, those two charts show a slightly different set of droplet sizes for the unmasked comparison.

Closing Words

"If you're not hopeful and optimistic, then you just give up.

You have to take the long hard look and just believe that if you're consistent, you will succeed.

"Rosa Parks inspired me to find a way to get in the way, to get in trouble... good trouble, necessary trouble."

"When you pray, move your feet"
- John Lewis

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